

LISTING OF THE CLAIMS

1. (Currently Amended) A multimedia data structure ~~reflecting change of a user relevance feedback for determining weights of image features~~ used for an image search, comprising:

- (a) information describing at least one feature of a certain image;
- (b) recent user feedback information based on user relevance feedback; and
- (c) whole feedback information based on the user relevance feedback obtained

since formation of the data structure.

2. (Previously Presented) The multimedia data structure as claimed in claim 1, wherein the recent user feedback information is determined for a predetermined time period or by a predetermined frequency.

3. (Previously Presented) The multimedia data structure as claimed in claim 1, wherein the recent user feedback information includes is a weight value learned by the user relevance feedback or a similar image information, and the whole feedback information is represented by a weight value learned by previous the user relevance feedback given since formation of the data structure.

4. (Original) The multimedia data structure as claimed in claim 1, further comprising recent user feedback reliability information representing how reliable the recent user feedback information is, and whole feedback reliability information representing how reliable the whole feedback information is.

5. (Currently Amended) The multimedia data structure as claimed in claim 4, wherein the recent user feedback reliability information is expressed by

$$1 - \frac{\sum_{i=0}^{i=m} (N - n_i)}{N}$$

where, N is a the number of user feedback responses, m is a the number of images in the a similar image list, and  $n_i$  is a the number of user feedback responses given to the i-th image.

6. (Canceled).

7. (Currently Amended) A The method as claimed in claim 6 of managing image information for an image search, comprising:

forming a data structure which includes information describing features of a certain image, recent user feedback information, and whole feedback information; and

determining weights for the features of the certain image based on the recent user feedback information and the whole feedback information,

wherein the method further comprises:

representing the recent user feedback information by a similar image list, and

reflecting a recent user feedback pattern based by the similar image list using a queue algorithm, and

wherein the queue algorithm comprises the steps of:

(a) checking whether a similar image multimedia object exists in a current queue when the similar image corresponding object is fed back;

(b) if it is checked that the similar image corresponding object does not exist in the current queue, inputting the similar image corresponding object to an uppermost space of a queue entrance, setting a the number of feedback responses of the similar image corresponding object to "1", and shifting images objects existing in the queue to lowe positions by one space;

(c) if it is checked that the similar image corresponding object exists in the current queue, increasing the number of feedback responses of the similar image corresponding object, and shifting other images the objects existing in the queue to upper positions by "N"; and

(d) if any image object is shifted to the a lower position over a size of the queue at the respective steps, deleting the image shifted to the lower position ~~corresponding object~~ from the queue.

8. (Currently Amended) The method as claimed in claim 7, wherein "N" is fixed or variably determined in accordance with the similar image object.

9. (Currently Amended) The method as claimed in claim 7, wherein "N" is varied in inverse proportion to a ~~the~~ frequency of appearance of the similar image object.

10. (Currently Amended) The method as claimed in claim 7, wherein if the similar image multimedia object does not exist in the queue when the similar image object is fed back, the similar image object is inputted to the queue only in case that the similar image object is fed back more than a ~~the~~ specified threshold number.

11. (Currently Amended) The multimedia data structure as claimed in claim 1, wherein the recent user feedback information is represented as a similar image list, and the similar image list has an image list structure which includes ~~composed of~~ a similar image identification, a score reflecting the current feedback, and a waiting duration representing a time period between a ~~the~~ final feedback time point and a ~~the~~ present time point.

12. (Currently Amended) A similar image list managing method for the multimedia data structure ~~reflecting the user feedback change as~~ recited in claim 11, comprising:

managing a similar image list in a manner that only images whose scores are over a predetermined threshold number are maintained in the list, or only images whose scores are on N ~~on~~ upper positions of the list if a size of the list is N.

13. (Currently Amended) A feedback reflecting score updating method for the multimedia data structure ~~reflecting the recent feedback as~~ recited in claim 11, comprising updating image scores in a manner that:

(a) with respect to images fed back from similar images, a following calculation is performed[[j]]:  $\text{Score (new)} = \text{Score (current)} \times \text{fW (Waiting Duration)} + 1$ ; and

(b) with respect to other images not fed back, a following calculation is performed[[j]]:  $\text{Score (new)} = \text{Score (current)} \times \text{fW (Waiting Duration)}$ ; and

(c) wherein fW (Waiting Duration) is a function having a ~~the~~ characteristic that it returns smaller ~~value~~ values as the waiting duration becomes longer.

14. (Currently Amended) A method of determining weights of image features used for an image search based on user relevance feedback, comprising:

(a) providing a multimedia data structure including information describing features of a certain image, recent user feedback information for the image, and whole feedback information for the image based on user relevance feedback obtained since formation of the data

structure, and reliability information corresponding to the recent user feedback information and whole feedback information;

(b) updating the recent user feedback information and whole feedback information and their reliabilities by learning them in response to the user relevance feedback;

(c) determining weights of image features in proportion to the reliabilities of the recent feedback information, the whole feedback information, or both the recent feedback information and the whole feedback information.

15. (Currently Amended) The method as claimed in claim 14, wherein the recent user feedback information is represented by a weight value learned by the user relevance feedback or a similar image information, and the whole feedback information is represented by a weight value learned by previous feedback given since formation of the data structure.

16. (Original) The method as claimed in claim 14, wherein the reliability of the recent user feedback information is determined in proportion to a consistency of a recently used pattern or feedback.

17. (Currently Amended) The method as claimed in claim 14, wherein the reliability of the whole feedback information is determined in proportion to a the number of feedback responses concerned in learning.

18. (Previously Presented) The method as claimed in claim 14, wherein the reliability of the whole feedback information is responsive to recorded user usage records wherein the recorded user usage records provide feedback to the reliability of the whole feedback information without user interaction.

19. (Currently Amended) A multimedia data structure reflecting change of a user relevance feedback for determining weights of image features used for an image search, comprising:

- (a) information describing at least one feature of a certain image;
- (b) recent user feedback information based on user relevance feedback;
- (c) whole feedback information based on the user relevance feedback obtained since formation of the data structure; and
- (d) reliability information indicating reliability of at least one of the user feedback information and whole feedback information.

20. (Previously Presented) The multimedia data structure of claim 19, wherein the reliability information indicates reliability of both of the user feedback information and the whole feedback information.

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